

Notes on some species of the genus *Rapala* (Lepidoptera : Lycaenidae) from Sulawesi, with the description of a new species

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25-11, Kyonan-cho 2 chome, Musashino-shi, Tokyo, 180

Abstract *Rapala ribbei*, *Rapala dioetas* and *Rapala enipeus* from Sulawesi are reviewed. Lectotypes of *Rapala bangkaiensis*, *Rapala bonthainensis* and *Rapala toliensis* are designated, and their taxonomic status are considered. *Rapala cassidyi* sp. n. from Sulawesi is described.

Key words Lycaenidae, lectotype, *Rapala*, *Rapala cassidyi* sp. n., Sulawesi, taxonomy.

Five species of the genus *Rapala* are hitherto known from Sulawesi and adjacent small islands, and fourteen nominal taxa are proposed for them. The status of two taxa, *Rapala manea manea* (Hewitson, [1863]) and *Rapala varuna olivia* H. H. Druce, 1895, are easily recognisable by the bluish purple colour on the upperside of both sexes. But the status of some other taxa are still unclear, though I reviewed some types of them (Takanami, 1989). In this paper, I deal with the status of the remaining twelve taxa, with the designation of some lectotypes and description of a new species.

The abbreviations for the location of the type specimens are : (BMNH)—The Natural History Museum, London ; (MNHU)—Museum für Naturkunde der Humboldt-Universität, Berlin ; (SMT)—Staatliches Museum für Tierkunde, Dresden ; (ZSBS)—Zoologische Sammlung des Bayerischen Staates, München.

Rapala ribbei (Röber, 1886) (Figs. 1-4, ♂ genitalia fig. 23)

Deudorix ribei Röber, 1886 : 68, pl. 5, figs. 11 (♂), 8 (♀). Lectotype ♀ (SMT) [designated by Takanami, 1989 : 54, figs. B-51a, b], Bonthain [Bantaeng], South Sulawesi.

Rapala ribbei irregularis Ribbe, 1926 : 81. Holotype ♂ (SMT) [synonymised by Takanami, 1989 : 54, figs. B-52a, b], Kalawara, West Central Sulawesi.

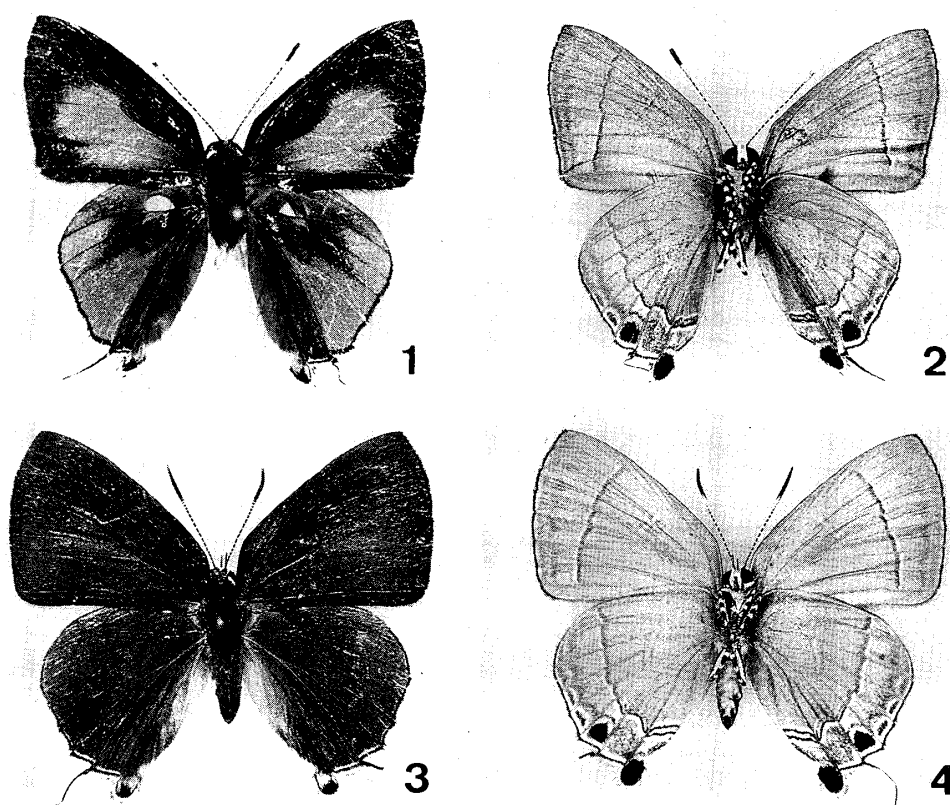
Rapala ribbei colossus Ribbe, 1926 : 82. Holotype ♀ (ZSBS) [examined by J.N. Eliot], Lewara, West Central Sulawesi. **Syn. n.**

♂. Forewing length 17-22 mm. Upperside : reddish orange areas wider than in the other species mentioned below ; black marginal border reduced to a thread on the hindwing. Forewing apical area and costal edge not tinged with white. Hindwing with a sexual brand about 3.0 mm in width at the base of space 7 ; another conspicuous brand of specialised scales present at the base of vein 6. Underside : greyish brown ; a hair tuft on dorsum greyish brown. Genitalia : end of phallus rounded, with two claw-like processes (the right claw-like process vestigial in some specimens) at the vesical opening.

♀. Forewing length 20-25 mm. Upperside : plain dark greyish brown (*colossus*), or with dull, diffuse yellowish orange areas at the forewing disc and in the hindwing spaces 1b-4 (*ribbei*). Underside : greyish brown.

Both sexes are usually larger than the other species of this genus from Sulawesi, but occasionally small specimens are also present (*irregularis*).

Specimens examined : 2 ♂ 2 ♀, Bantaeng ; 1 ♀, Camba ; 1 ♂, Kalawara ; 1 ♂, Malili ; 1 ♂ 4 ♀, Palolo.

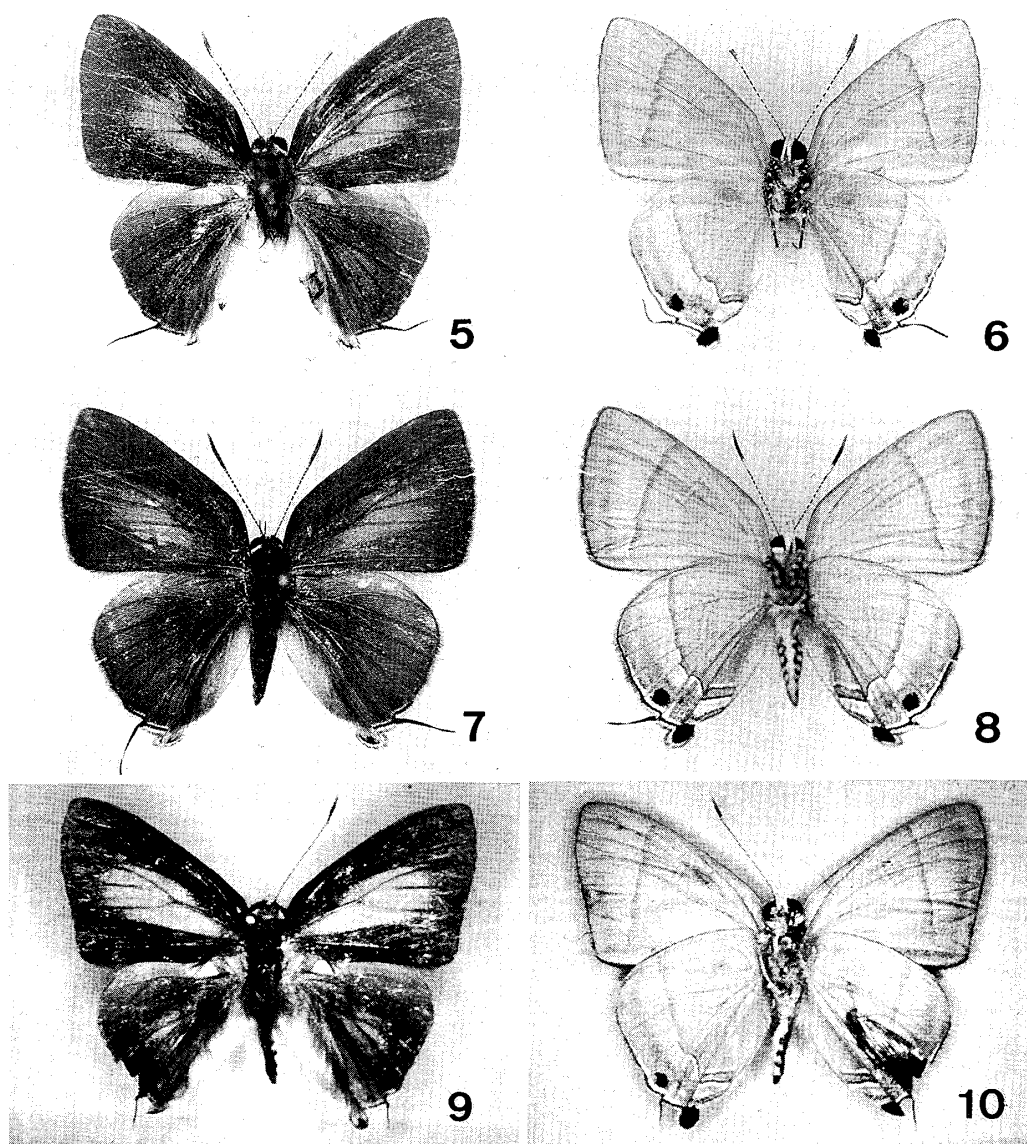


Figs. 1-4. *Rapala ribbei*. 1. ♂ (from Palolo nr Palu), upperside; 2. *Ditto*, underside
3. ♀ (from Palolo nr Palu), upperside; 4. *Ditto*, underside.

***Rapala dioetas* (Hewitson, [1863]) (Figs. 5-10, ♂ genitalia fig. 24)**

- Deudorix dioetas* Hewitson, [1863] : 21, pl. 7, fig. 14 (♂). Lectotype ♂ (BMNH) [designated by Takanami, 1989 : 72], Makassar [Ujungpandang], South Sulawesi. ♂ genitalia : Takanami, 1989, figs. C-10a, b.
- Deudorix affinis* Röber, 1886 : 69, pl. 5, fig. 10 (♀). Lectotype ♂ (SMT) [designated by Takanami, 1989 : 54, 72, figs. B-53a, b], Bonthain [Bantaeng], South Sulawesi.
- Rapala bangkaiensis* Ribbe, 1926 : 82. Lectotype ♂ (SMT) (Figs. 9-10. Forewing length 17 mm), here designated, labelled "Bangkei H. Kühn 1885/Coll. C. Ribbe Gesch.: Leo Lewin 1913-N.1/Staatl. Museum für Tierkunde Dresden", Bangkei [Banggai] I. **Syn. n.**
- Rapala zylda* Seitz, [1922] : pl. 160, figs. i6 (♀), i7 (♂). Syntype ♀ (BMNH), labelled "Insula Lutungan. xii. 1895. H. Fruhstorfer." **Syn. n.**
- Rapala dioetas noachis* Seitz, 1927 : 1002, pl. 160, fig. i5 (♂). Syntype ♂ (not located), Saleyer [Salayar] I. **Syn. n.**

♂. Forewing length 15-19 mm (Figs. 5-6 : 15 mm). Upperside : reddish orange areas smaller than in *enipeus*, rather narrower in space 1b on the forewing, of dull hue in spaces 2, 3 and 4, or absent in small individuals, and not extending into cell on the hindwing; occasionally the reddish orange colour thins into yellowish orange as in the lectotype. Forewing apical area and costal edge without white scales. Hindwing with a sexual brand about 2.5 mm in width at the base of space 7; the base of vein 6 also with sparse specialised scales in some large individuals. Underside : yellowish brown. Forewing apical area without white scales; a hair tuft at dorsum greyish brown. Genitalia : end of phallus rounded with a claw-like process at the centre of the vesical opening.



Figs. 5-10. *Rapala dioetas*. 5. ♂ (from Bantimurung), upperside; 6. *Ditto*, underside; 7. ♀ (from Bantimurung), upperside; 8. *Ditto*, underside; 9. Lectotype ♂ of *Rapala bangkaiensis*, upperside; 10. *Ditto*, underside.

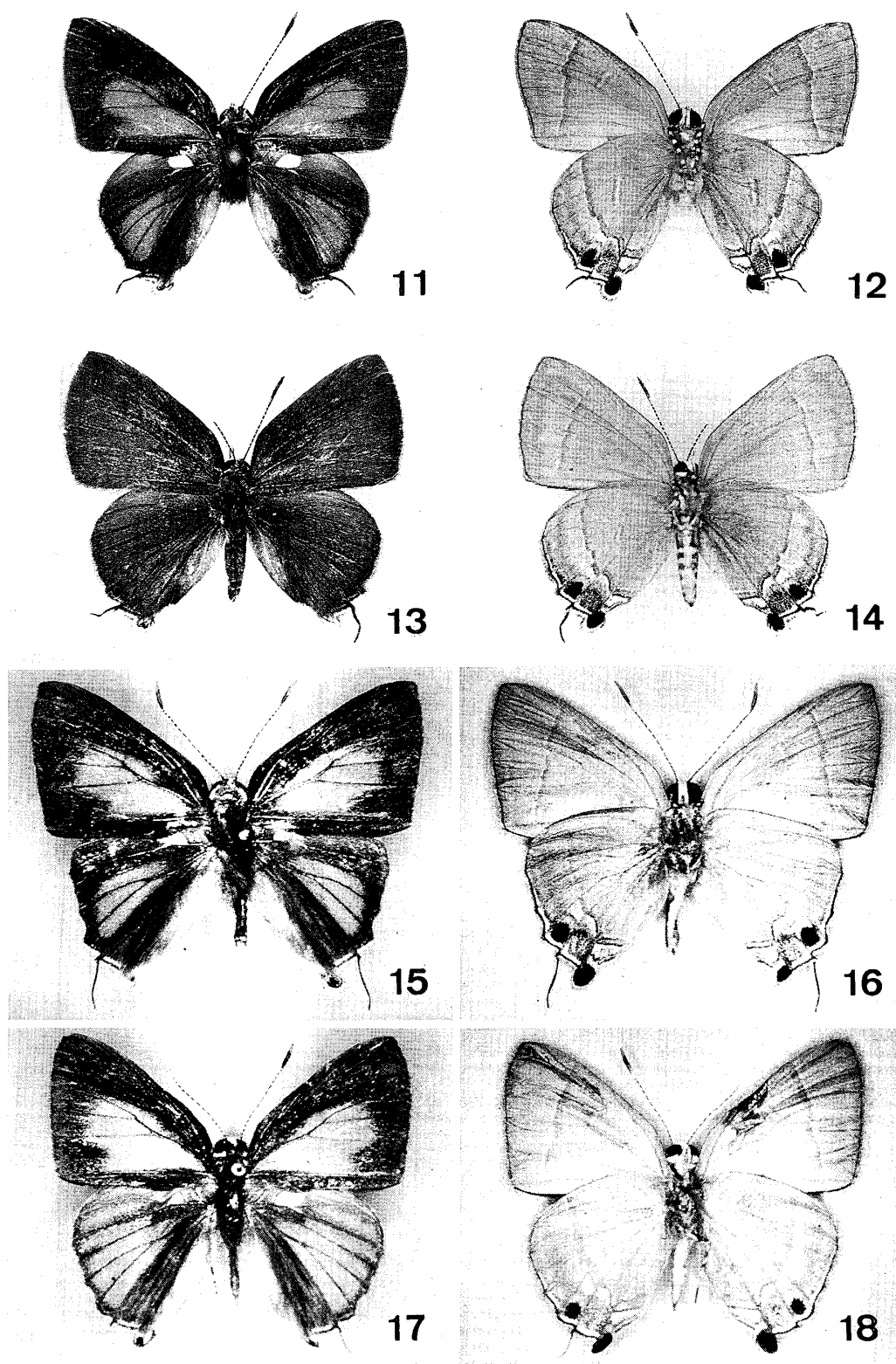
♀. Forewing length 16-20 mm. Upperside: usually dark greyish brown, with a dull yellowish orange patch in the forewing disc. Underside: yellowish brown.

The specimens from Banggai (*bangkaiensis*) and Salayar (*noachis*) Islands are within the limits of individual variations of *dioetas*. According to Corbet (1942: 174), a taxon *zylda*, only figured in Seitz, may also belong to this species.

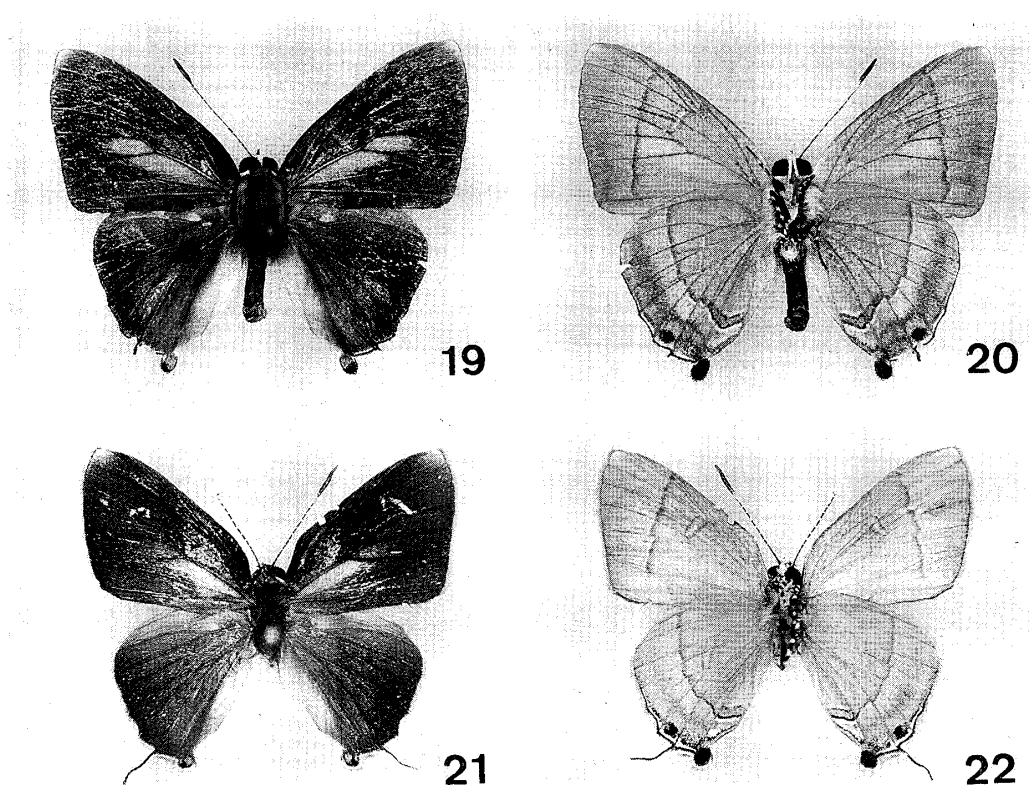
Specimens examined: 12 ♂ 6 ♀, Bantimurung; 2 ♂ 2 ♀, Banteang; 1 ♂, Ujungpandang; 1 ♀, Waopada; 1 ♀, Palolo; 1 ♂, Popayat; 2 ♂ 1 ♀, Banggai I.; 1 ♂, Salayar I.

Rapala enipeus (Staudinger, 1888) (Figs. 11-18, ♂ genitalia fig. 25)

Deudorix enipeus Staudinger, 1888: 279. Lectotype ♂ (MNHU) [designated by Takanami, 1989: 73, figs. A-89a, b], Minahassa, North Sulawesi. ♂ genitalia: Takanami, 1989, figs. C-9a, b.



Figs. 11-18. *Rapala enipeus*. 11. ♂ (from Manui Is.), upperside; 12. *Ditto*, underside; 13. ♀ (from Manui Is.), upperside; 14. *Ditto*, underside; 15. Lectotype ♂ of *Rapala toliensis*, upperside; 16. *Ditto*, underside; 17. Lectotype ♂ of *Rapala bonthainensis*, upperside; 18. *Ditto*, underside.



Figs. 19-22. *Rapala cassidi* sp. n. 19. Holotype ♂, upperside; 20. *Ditto*, underside; 21. Paratype ♂ (from Palolo nr Palu), upperside; 22. *Ditto*, underside.

Rapala toliensis Ribbe, 1926: 82. Lectotype ♂ (SMT) (Figs. 15-16. Forewing length 18 mm), here designated, labelled "Original/*Rapala toliensis* Ribbe/Toli Toli N. Celebes XII. 95./Coll. C. Ribbe Gesch.: Leo Lewin 1913-N. 1/Celebes 1919 N: 6/Staatl. Museum für Tierkunde Dresden", Tolitoli, Central Sulawesi. **Syn. n.**

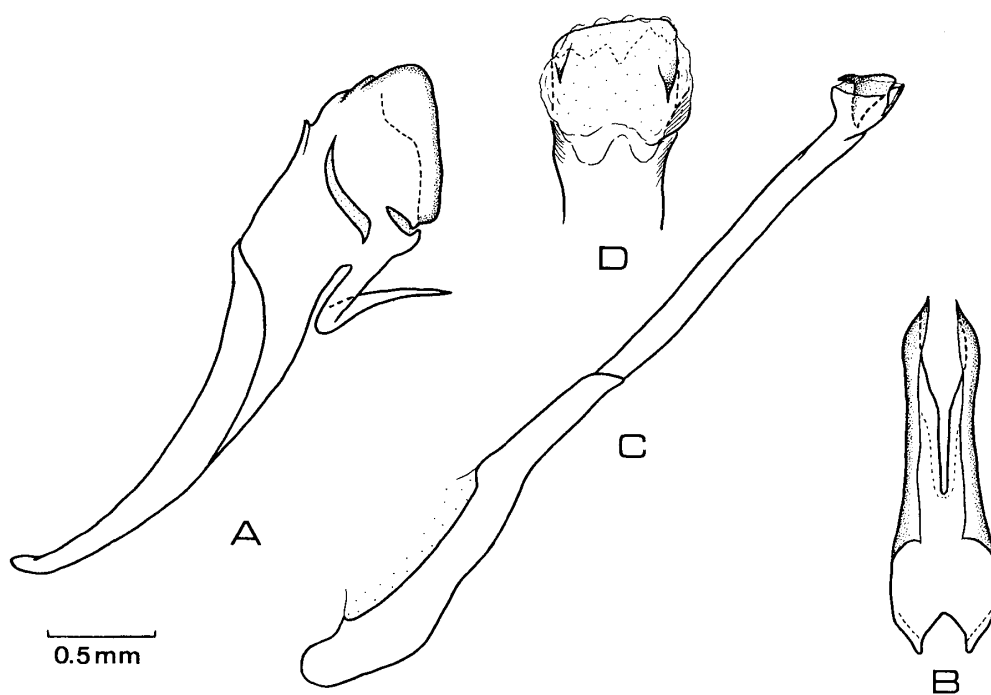
Rapala bonthainensis Ribbe, 1926: 82. Lectotype ♂ (SMT) (Figs. 17-18. Forewing length 17 mm), here designated, labelled "Original/ S. Celebes Bonthain C. Ribbe 1884/Coll. C. Ribbe Gesch.: Leo Lewin 1913-N. 1/Celebes 1919 N: 6/Staatl. Museum für Tierkunde Dresden", Bonthain [Bantaeng], South Sulawesi. **Syn. n.**

Rapala cindy D'Abrera, 1986: 624, figs. ♂, nec ♀ (*dioetas*). Holotype ♂ (BMNH), Makassar [Ujungpandang], South Sulawesi. **Syn. n.**

♂. Forewing length 16-19 mm. Upperside: reddish orange areas larger than in *dioetas*, rather wider in space 1b on the forewing, prominent in spaces 2, 3, 4 and 5, and extend into cell on the hindwing. Forewing apical area and costal edge without white scales. Hindwing with a sexual brand about 2.5 mm in width at the base of space 7; sparse specialised scales also present at the base of vein 6. Underside: dark brownish yellow. Forewing apical area not whitish; a hair tuft on dorsum yellowish brown. Genitalia: end of phallus bluntly pointed on the right side with two claw-like processes.

♀. Forewing length 14-19 mm. Upperside: usually dark greyish brown, with a dull yellowish orange patch on the forewing disc in some specimens. Underside: deep yellow.

Two names are given to ♂ individual variations: *bonthainensis* with the reddish orange areas extending into space 6 on the hindwing as in *ribbei*; *cindy* with the reddish



Figs. 23. Male genitalia of *Rapala ribbei*. A. Lateral view of ring; B. Dorsal view of valvae; C. Lateral view of phallus; D. Dorsal view of phallus end (enlarged).

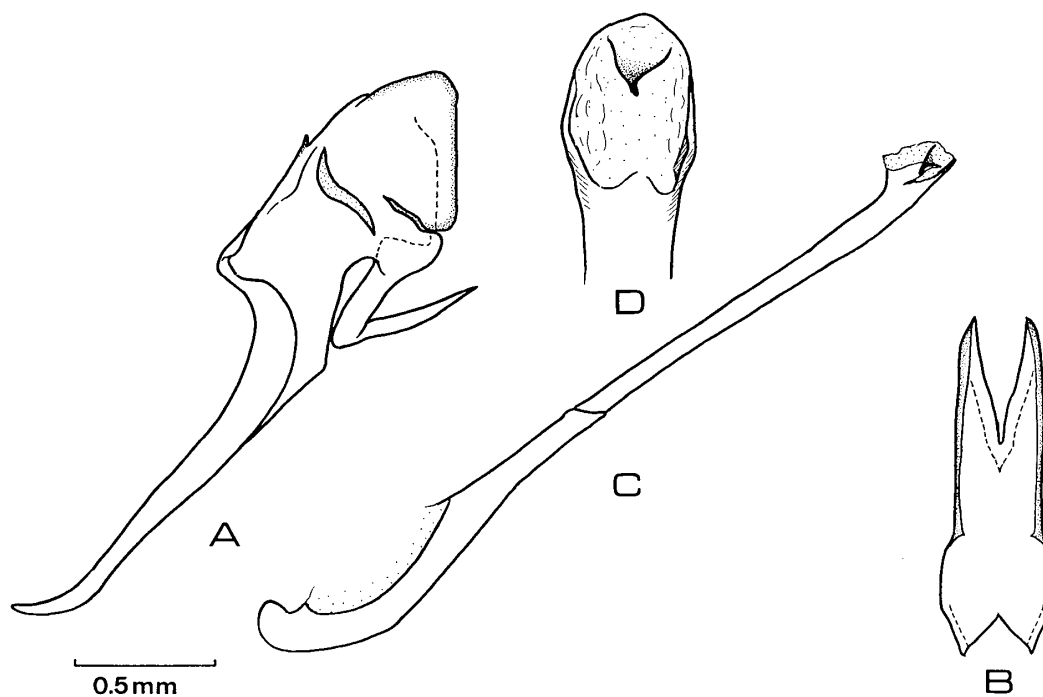


Fig. 24. Male genitalia of *Rapala dioetas* (A-D as in Fig. 23).

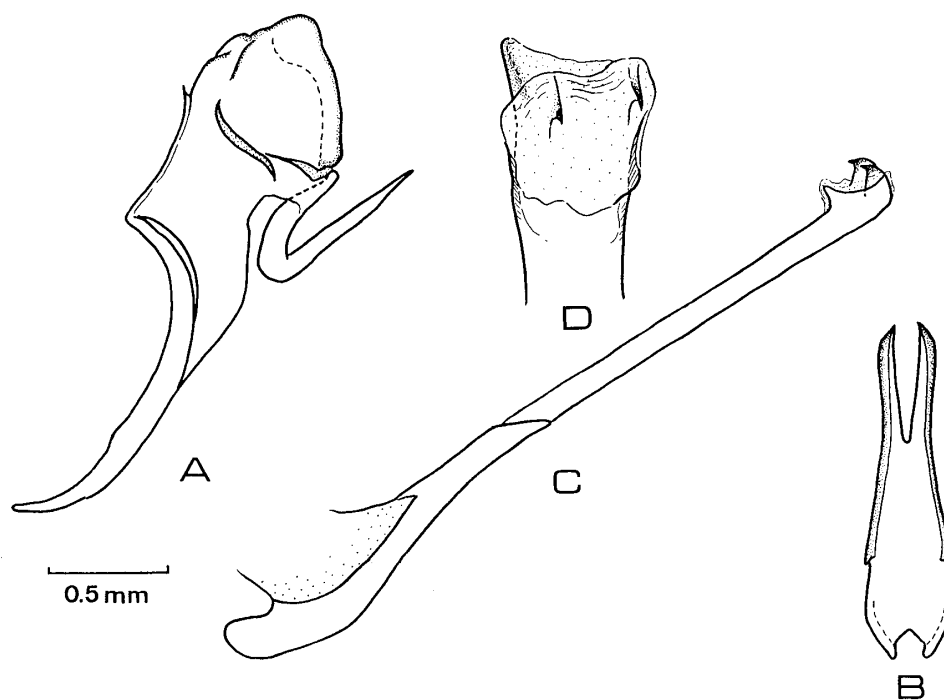


Fig. 25. Male genitalia of *Rapala enipeus* (A-D as in Fig. 23).

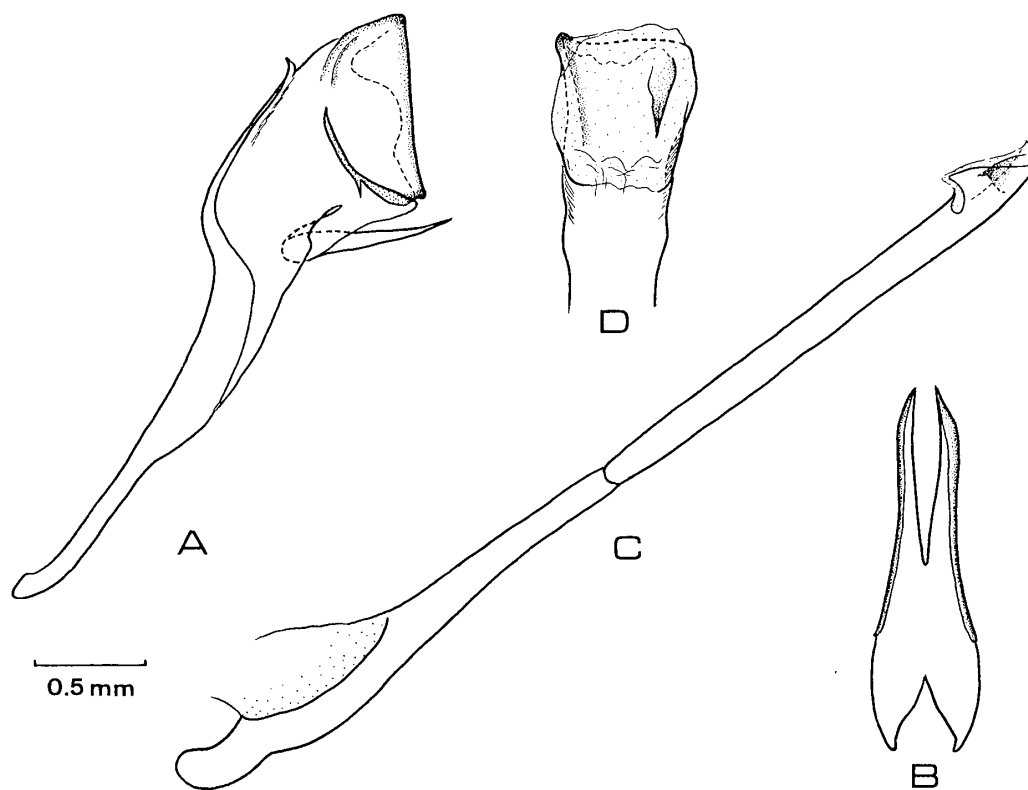


Fig. 26. Male genitalia of *Rapala cassidy* sp. n., holotype (A-D as in Fig. 23).

orange areas changing into yellowish orange.

Specimens examined: 2 ♂ 1 ♀, Minahassa; 1 ♂, Tawaeli; 1 ♀, Donggalan; 1 ♂, Malili; 13 ♂ 8 ♀, Bantimurung; 11 ♂ 4 ♀, Manui I.

Rapala cassidy sp. n. (Figs. 19–22, ♂ genitalia fig. 26)

♂. Face creamy white. Eyes hairy. Palpi creamy white; upperside of the third segment black. Antenna with 33 segments. Legs black, tibiae and tarsi banded with white as in *Rapala dioetas*. Upperside: resembles *dioetas*, ground colour dark brown, yellowish orange area reduced; forewing with the orange spots forming a band under cubitus at bases of spaces 1b, 2 and 3; hindwing with some orange scales present in basal half of spaces 2, 3 and 4; forewing apical area and costal edge whitish; a sexual brand at the base of space 7 smaller than usual, about 1 mm in width; no secondary brand of specialised scales at the base of vein 6. Underside: the coloration and markings are almost the same as in *dioetas*, except for somewhat greyish ground colour and whitish apical area on forewing; a hair tuft on dorsum greyish brown. Genitalia: as in the figure; end of phallus with a ridge on the right side and with a claw-like process on the left side.

♀ Unknown.

Holotype ♂ (Figs. 19–20. Forewing length 19 mm), Blue Zone Ridge, Dumoga-Bone National Park, alt. 600 m, North Sulawesi, 7. ii. 1985 (A. Cassidy), preserved in the Natural History Museum (BMNH), London. Paratypes: 3 ♂, same data as holotype, in Coll. A. Cassidy; 1 ♂, same data as holotype, in Coll. Takanami; 1 ♂ (Forewing length 15 mm), Palolo nr Palu, Central Sulawesi, 1988, in Coll. Takanami.

The species has been named after Mr. Alan C. Cassidy, who captured the holotype and most of the paratypes during “Project Wallace” in 1985.

Acknowledgements

I greatly appreciate the kindness of Mr. Alan C. Cassidy (Berkshire/England) who allowed me to describe the new species from specimens captured by himself during Project Wallace in 1985. I am also grateful to Lt. Col. John N. Eliot (Taunton/England) for reading this manuscript. Dr. R. Krause (SMT/Dresden) always help me to examine the national collection. Mr. Campbell R. Smith (BMNH/London) kindly gave me the transparencies of some type specimens of *Rapala*. Thanks are also due to Mr. Yasuo Seki (Shibuya/Tokyo), Mr. Kiyoshi Maruyama (Hachioji/Tokyo) and Mr. Yasusuke Nishiyama (Setagaya/Tokyo), for their kind assistance in supplying material for this study.

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摘 要

インドネシア, スラウェシ島産シジミチョウ *Rapala* 属の 1 新種及びその近縁種について(高波雄介)

これまでに知られたスラウェシ島(周縁の小島を含む)産の *Rapala* 属のシジミチョウは 5 種と考えられ, これらに与えられたと思われる種小名は 14 を数える. このうち♂♀共にその表面が青紫色を帯びる *Rapala manea manea* (Hewitson, [1863]) と *Rapala varuna olivia* H. H. Druce, 1895 の 2 種に対しては, それぞれ単数の種小名が亜種名として当てがわれている. 一方, ♂表面に赤橙色斑を持ち♀表面が紫色を帯びない *Rapala dioetas* (Hewitson, [1863]), *Rapala ribbei* (Röber, 1886), *Rapala enipeus* (Staudinger, 1888) の 3 種に対しては, それぞれ複数の種小名がある. これらの一部は再検討された(Takanami, 1989) が, 依然不明確のままに残されたものがあつた. 今回, 1 新種を含めてこれらを整理する機会を与えられたので, 手持ち資料の範囲でまとめた.

Rapala ribbei (Röber, 1886)

♂表面の赤橙色部は発達し, 特に後翅では黒縁はほとんど糸状になる. ♂後翅表面第 7 室基部の半円形の性斑に加え, 第 6 脈基部には比較的大きい三角形の第二性斑を現す. ♀表面の地色は暗褐色で, 輪郭の不明瞭な黄橙色部を前後翅に現すものから, これを全く欠くものまで変異の幅が大きい. 一般に南部の産地の♀は黄橙色部が発達し (*ribbei*), 中北部の産地のものは黒い個体 (*colossus*) が多い. 普通他のスラウェシ産 *Rapala* 各種に比べ大型だが, *irregularis* のような小型の個体も見られる. スラウェシ本島各地から得られているが個体数は多くない.

Rapala dioetas (Hewitson, [1863])

♂表面赤橙色部は, 普通前翅の中室下半部から第 1b 室基半部にかけて, 後翅の第 2-4 室基半部に現れるが, 特に後翅では *enipeus* に比べ発達が悪く, 小型の個体においてはしばしば消失する. また中には *enipeus* 同様, 表面橙色部が目だって黄橙色になる個体もあり, 後模式はまさにその型である. ♂後翅表面第 7 室基部の性斑は半円形のやや明るい灰褐色で, 第 6 脈基部には *enipeus* や *ribbei* に見られるような第二性斑は普通現れないが, 大型の個体には稀に微かに認められる場合がある. ♂前翅裏面後縁部の毛束は灰褐色のものが多い. ♂交尾器 phallus 尾端部の形状は丸く, 開口部の中央に大きな鉤爪状突起が 1 個ある. ♀は通常くすんだ黄橙色斑を前翅表面に現し, その広がりには♂よりもやや狭く輪郭はぼやける. スラウェシ島全域に広く分布し, Banggai 島産に *bangkaiensis*, 南部 Salayar 島産に *noachis* などの名があるが, 同じ産地内の個体変異の幅が大きく, 地理的な亜種は認め難い. Seitz により図示された *zylda* も記載文はないが, 恐らく本種と考えられる (Corbet, 1942).

Rapala enipeus (Staudinger, 1888)

♂表面赤橙色部は *dioetas* よりも発達し, 前翅では *dioetas* 同様に現れるが第 1b 室でやや大きく広がり, さらに後翅では第 2-5 室に幅広く現れ中室内にまで及ぶ. 中には赤橙色部が *ribbei* のように後翅第 6 室内にまで広がる個体 (*bonthainensis*) もある. また *dioetas* 同様, ♂には表面橙色部が著しく黄色くなる個体 (*cindy*) がある. ♂後翅表面第 7 室基部の半円形の性斑は *dioetas* 同様だが, 第 6 脈基部には

小さいながらも特殊鱗の集まった筋状の第二性斑を持つ。♂前翅裏面後縁部の毛束は *dioetas* よりやや明るい黄褐色のことが多い。♂交尾器 phallus 尾端部の形状は頭方向に向かって右角が角張り、開口部の左右に大きな鉤爪状突起が1個ずつある。♀表面は一般に暗灰褐色だが、前翅第3室基部を中心に微かに黄橙色部を現す個体もある。*dioetas* 同様スラウエシ島のほぼ全域から知られる。

***Rapala cassidyi* sp. n.**

額部は白色。触角は33節。脚部は *dioetas* 同様に黒地に白の横縞。♂表面地色は黒褐色。黄橙色部は著しく減退し、前翅第1b-2室および第3室の基部に中室下脈に沿って細長く直線状に現れ、後翅では第2-4室基半部に微かな橙色鱗粉の散布が見られるのみ。また前翅翅頂部及び前縁は白くなるが、これは近似の *dioetas* や *enipeus* には全く見られない特徴である。また♂後翅表面第7室基部の半円形の性斑は著しく小型で、*dioetas* などと比較して面積比は約5分の1程度、幅は約1mm、また *dioetas* 同様第二性斑を現さない。裏面色斑は *dioetas* とほとんど同じで地色は黄土色。前翅後縁の毛束は灰褐色。♂交尾器 phallus 尾端部の形状は、頭方向に向かって右側に筋が入り右角に短い突起を持ち、開口部左側には大きな鉤爪状突起が1個現れる。♀は未知。今のところスラウエシ島中北部からのみ得られている。本種は表面上 *dioetas* あるいは *enipeus* の黒化型に見えるが、色斑のほか性標や♂交尾器にも安定した差異が認められ別種と判断される。

(Accepted May 27, 1992)